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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/883,381	06/19/2001	James Battle	108339-00070	1066

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SQUIRE, SANDERS & DEMPSEY L.L.P.
14TH FLOOR
8000 TOWERS CRESCENT
TYSONS CORNER, VA 22182

EXAMINER

LEVITAN, DMITRY

ART UNIT PAPER NUMBER

2662

DATE MAILED: 11/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/883,381

Applicant(s)

BATTLE ET AL.

Examiner

Dmitry Levitan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 and 23-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-14 is/are allowed.
- 6) ☒ Claim(s) 15, 16, 18, 23, 24 and 26 is/are rejected.
- 7) ☒ Claim(s) 17, 25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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Amendment, filed 11/04/05, has been entered. Claims 1-18 and 23-26 remain pending.

Double Patenting

In light of Applicant's amendment, the double patenting rejection of claims 19-22 has been withdrawn.

Claim Objections

In light of Applicant's amendment, the objection to the claims 1-14 has been withdrawn.

Claim Rejections - 35 USC § 112

In light of Applicant's amendment, the rejection under second paragraph of 35 U.S.C. 112 has been withdrawn.

Claim Rejections - 35 USC § 102

1. Claims 15, 16, 23 and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Epps (US 6,721,316).

Regarding claims 15 and 23, Epps teaches a method and an apparatus for forwarding data in a network switch fabric (communication system on Fig. 1 and 1:31-50, comprising switching fabric 120), comprising:

Receiving an incoming data packet at a first port of the fabric (receiving a packet 113 at the receive portion on Fig. 2 and 5:11-33);

Reading a first packet portion, less than a full packet length (reading the header portion, as the headers are separated from the tail portion on Fig. 3 and 5:50-62 at the pre-process stage 420

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6:28-33), to determine particular packet information, including a source address and a destination address (extracting IP destination address 11:27-30 and inherently the source address, because the header contains the source address 1:24-30 and this information is essential for the hashing operation 23:16-28) ;

Determining at least one egress port based on a lookup in a forwarding table (inherently part of the system, because packets are queued per output ports 16:45-55, based on the table lookup at stage 440 6:40-45);

Determining a class of service for the incoming data packet based on the particular packet information (extracting CoS information from the packet header 11:26-31);

Assigning data from the incoming packet to a queue based on at least one egress port and the class of service (arranging eight queues for packets with different CoS levels 16:50-55);

Repeating the above steps for further incoming data packets and assigning data from said incoming data packets to a series of queues (inherently part of the system, because the communication system of Fig. 1 operates with multiple packets 113);

Forwarding data packets sequentially from each queue of said series of queues (forwarding the packets using modified deficit round robin method to the switch fabric interface 170 as shown on Fig. 12 and 7:39-47).

In addition, regarding claim 23, Epps teaches means for receiving the packet (Physical Interface 210 and Receive FIFO 215 on Fig. 2) and means for reading, determining, assigning and forwarding as appropriate portions pipeline switch 220 and receive buffer manager 240 on Fig. 2 (see claim 15 rejection for details).

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2. Regarding claims 16 and 24, Epps teaches packing the data packets into cells having a specific cell length and assigning the packed data to the queue (outbound fabric interface module utilizes cells, wherein each cell has a specific cell length, and enqueues the packet39:41-40:7).

Claim Rejections - 35 USC § 103

Claims 18 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Epps.

Epps substantially teaches the limitations of claims 18 and 26, including opcode value to identify packets as unicast, multicast, broadcast or a failure (inherently part of the Ipv6 header of an IP packet 5:35-45, because the system utilizing unicast and multicast registers and flagging packets with exception/errored condition 7:49-55).

Epps does not teach opcode value to identify packets as broadcasting packets.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add opcode value to identify packets as broadcasting packets to the system of Epps to improve the system operation by including identification of a well known and used packet type as broadcasting packets, as broadcast is known as a form of multicasting.

Allowable Subject Matter

3. Claims 1-14 are allowed.

4. Claims 17 and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

5. Applicant's arguments filed 11/04/05 have been fully considered but they are not persuasive.

On page 15 of the Response, Applicant argues that Epps does not teach determining at least one egress port based on a lookup in a forwarding table.

Examiner respectfully disagrees.

Epps teaches determining an egress port for each data packet, because Epps organizes the queues per output ports 16:45-55 and inherently using table lookup 6:40-46 to perform this operation, because linking each data packet to an appropriate output ports is essential for the switch operation.

In addition, Epps teaches lookup circuit 145 to perform the inbound packets routing (inherently using routing/forwarding table) including selection of the output interfaces as a well known procedure in the routing art 1:65-2:20.

Applicant's arguments regarding the physical location of the output/destination ports on different or the same card are irrelevant, as the physical structure of the switch was not directly claimed.

On page 16 of the Response, Applicant argues that BHDR data is not based on the lookup in a forwarding table.

Examiner respectfully disagrees.

Examiner did not base his rejection on the structure of BHDR, therefore these arguments are irrelevant.

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In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, Epps teaches opcode values to identify packets as unicast, multicast, broadcast or a failure (see the rejection of claims 18 and 26).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the existing opcode value to identify packets as broadcasting packets for special multicast packets processing (Multicast on TBM 33:35-40).

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

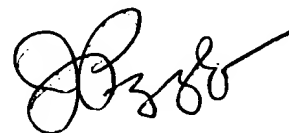
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dmitry Levitan whose telephone number is (571) 272-3093. The examiner can normally be reached on 8:30 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Dmitry Levitan
Patent Examiner.
11/10/05



JOHN PEZZLO
PRIMARY EXAMINER